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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
FIDLER, SHELBY LEE	

ART UNIT	PAPER NUMBER
2861	

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/730,179	SU ET AL.	
	Examiner	Art Unit	
	Shelby Fidler	2861	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-9,12-17* is/are rejected.

7)☒ Claim(s) *2,3,10 and 11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12/8/2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 5, 8, 9, 13, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silverbrook (US 6679582 B2) in view of Beck et al. (US 6431678 B2).

With regards to claim 1, Silverbrook teaches a leakage detection apparatus (col. 5, lines 18-20) for a multi-channel inkjet cartridge (Figure 7) comprising: a plurality of electrodes, disposed in one of the channels of the inkjet cartridge respectively (col. 2, lines 18-19), contacting a reagent in the corresponding channel (col. 5, lines 20-22). Silverbrook does not explicitly teach a controller coupled to the electrodes. Beck discloses a controller coupled to the electrodes, to detect leakage between channels (col. 2, lines 14-15).

With regards to claim 5, Silverbrook teaches an inkjet dispensing apparatus (col. 1, line 54) comprising: a cartridge including a plurality of channels (Figure 7), wherein reagents are received in the channels (col. 3, lines 57-58); a chip, disposed on the cartridge (element 16, Figure 5a), including a plurality of first through holes communicating with one of the channels respectively (col. 5, lines 47-53); a plurality of electrodes, disposed in one of the channels of the cartridge respectively (col. 2, lines 18-19), contacting the reagent in the corresponding channel (col. 5, lines 20-22), and detecting the leakage between the channels via the electrode (col. 5, lines 18-20). Silverbrook does not explicitly teach a controller coupled to the electrodes for

detecting a leak. Beck discloses a controller coupled to the electrodes, to detect leakage (col. 2, lines 14-15).

With regards to claim 8, Silverbrook teaches a barrier layer, disposed on the chip (dielectric layer 18, Figure 1), including a plurality of second through holes communicating with the first through holes respectively (Figure 5a); and a nozzle plate (nozzle guard 80, Figure 5a), disposed on the barrier layer, including a plurality of orifices communicating with the second through holes, respectively (elements 84, Figure 5a).

With regards to claim 9, Silverbrook teaches making the nozzle plate of polyimide (col. 6, lines 45-46).

With regards to claim 13, Silverbrook teaches a leakage detection method comprising: providing an inkjet cartridge, a plurality of electrodes (col. 2, lines 18-19), wherein the inkjet cartridge includes a chip (element 16, Figure 5a) and a plurality of channels (elements 48, Figure 7), reagents are received in the channels (col. 3, lines 57-58); inserting the electrodes to one of the channels of the inkjet cartridge respectively (col. 2, lines 18-19) so that each of the electrodes contacts the reagent in the corresponding channel (col. 5, lines 20-22), and detecting the leakage between the channels via the electrode (col. 5, lines 18-20). Silverbrook does not explicitly teach a controller coupled to the electrodes for detecting a leak. Beck discloses a controller coupled to the electrodes, to detect leakage (col. 2, lines 14-15).

With regards to claim 16, Silverbrook teaches providing voltage to one of the electrodes after inserting the electrodes into the channels (Figure 5b).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify Silverbrook's invention with Beck's controller. The motivation for doing so, as taught by Beck, is to detect undesired leakage (col. 1, line 46).

Claims 4, 12, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silverbrook in view of Beck as applied to claim 1 above, and further in view of Monclus et al. (US 6402277 B1).

With regards to claims 4, 12, and 17, Silverbrook and Beck do not teach displaying leakage detection results. Monclus discloses displaying leakage detection results after detecting a leak (col. 6, lines 58-60).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to combine Silverbrook and Beck's invention with Monclus' display. The motivation for doing so, as taught by Monclus, is to advise users (col. 6, line 59).

Claims 6-7 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silverbrook in view of Beck as applied to claim 5 above, and further in view of Kanayama et al. (US 5572241).

With regards to claims 6 and 14, Silverbrook and Beck do not teach the chip made of glass. Kanayama discloses a chip (ink pass plate 14, Figure 1) made of glass (col. 2, lines 35-38).

With regards to claims 7 and 15, Silverbrook and Beck do not teach covering the chip with an electric-isolating layer. Kanayama discloses the chip covered by an electric-isolating layer (nonconducting materials, col. 2, lines 35-38).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify Silverbrook and Beck's chip with Kanayama's use of materials. The motivation for doing so, as taught by Kanayama, is to keep the chip from being electrically conductive (col. 2, line 38) to ensure circuit response to leakage.

Claim Objections

Claims 2-3, and 10-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With regards to claims 2 and 10, the most pertinent prior art fails to disclose a controller that provides voltage to one of the electrodes at a time. Silverbrook and Beck teach supplying voltage to the electrodes, but not one electrode at a time.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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